### NOTIFICATION APPLIANCE CIRCUIT VOLTAGE DROP & POWER REQUIREMENTS

CKT AV10 - MEZZANINE SOUTHEADESCRIPTION	AST QTY	CURRENT PER ITEM (AMPS)	TOTAL CURRENT PER ITEM
WHEELOCK STROBE 15 cd	_	0.5010	0.0000
WHEELOCK HORN/STROBE 15cd	_	0.0000	0.0000
WHEELOCK STROBE 30 cd	_	0.0300	0.0000
WHEELOCK HORN/STROBE 30 cd	_	0.0450	0.0000
WHEELOCK STROBE 75 cd	_	0.1650	0.0000
WHEELOCK HORN/STROBE 75 cd	_	0.1100	0.0000
WHEELOCK STROBE 110 cd	4	0.2200	0.8800
WHEELOCK HORN/STROBE 110 cd	_	0.3070	0.0000
WHEELOCK HORN	2	0.0870	0.1740
AUTOCALL BELL	4	0.0500	0.2000
AUTOCALL BELL/STROBE 75 cd	_	0.2150	0.0000
TOTAL NOTIFICATION APPLIANCES CURRENT	•		1.254

### VOLTAGE DROP (VD) CALCULATIONS

REMAINING VOLTS = 22.748

VD = {(I) (D) (21.6)}/CM
WHERE: I = CIRCUIT CURRENT
 D = CONDUCTOR LENGTH (FT) ONE WAY
 21.6 = CONSTANT
 CM = WIRE CROSS-SECTIONAL AREA (CIRCULAR MILS)
VD = {(1.254 A) (190FT) (21.64)}/4110 = 1.252 V
%VD = {1.252 V / 24V} X 100 = 5.217 %

 WIRE
 CIRCULAR

 SIZE
 MILS

 12AWG
 6530

 14AWG
 4110

 16AWG
 2580

 18AWG
 1620

 20AWG
 1020

# NOTIFICATION APPLIANCE CIRCUIT VOLTAGE DROP & POWER REQUIREMENTS

CKT AV8 — MEZZANINE SOUTH DESCRIPTION	QTY	CURRENT PER ITEM (AMPS)	TOTAL CURRENT PER ITEM				
WHEELOCK STROBE 15 cd	_	0.5010	0.0000				
WHEELOCK HORN/STROBE 15cd	_	0.0000	0.0000				
WHEELOCK STROBE 30 cd	_	0.0300	0.0000				
WHEELOCK HORN/STROBE 30 cd	_	0.0450	0.0000				
WHEELOCK STROBE 75 cd	_	0.1650	0.0000				
WHEELOCK HORN/STROBE 75 cd	_	0.1100	0.0000				
WHEELOCK STROBE 110 cd	5	0.2200	1.1000				
WHEELOCK HORN/STROBE 110 cd	_	0.3070	0.0000				
WHEELOCK HORN	2	0.0870	0.1740				
AUTOCALL BELL	5	0.0500	0.2500				
AUTOCALL BELL/STROBE	_	0.2150	0.0000				
TOTAL NOTIFICATION APPLIANCES CURRENT							

### VOLTAGE DROP (VD) CALCULATIONS

REMAINING VOLTS = 22.638

VD = {(I) (D) (21.6)}/CM
WHERE: I = CIRCUIT CURRENT
 D = CONDUCTOR LENGTH (FT) ONE WAY
 21.6 = CONSTANT
 CM = WIRE CROSS-SECTIONAL AREA (CIRCULAR MILS)
VD = {(1.524 A) (170FT) (21.64)}/4110 = 1.362 V
%VD = {1.362 V / 24V} X 100 = 5.673 %

16AWG 2580 18AWG 1620 20AWG 1020

SIZE

12AWG

14AWG

WIRE CIRCULAR

MILS

6530

4110

## NOTIFICATION APPLIANCE CIRCUIT VOLTAGE DROP & POWER REQUIREMENTS

CKT AV9 - MEZZANINE SOUTHEAST	OTV	CURRENT PER ITEM (AMPS)	TOTAL CURRENT PER ITEM			
DESCRIPTION  WHEELOCK STROBE 15 cd	QTY	0.5010	0.0000			
WHEELOCK HORN/STROBE 15cd	_	0.0000	0.0000			
WHEELOCK STROBE 30 cd	_	0.0300	0.0000			
WHEELOCK HORN/STROBE 30 cd	_	0.0300	0.0000			
WHEELOCK STROBE 75 cd	_	0.1650	0.0000			
WHEELOCK HORN/STROBE 75 cd	_	0.100	0.0000			
WHEELOCK STROBE 110 cd	5	0.1100	1.1000			
WHEELOCK HORN/STROBE 110 cd	3	0.2200	0.0000			
WHEELOCK HORN	2	0.1730	0.0000			
AUTOCALL BELL	5	0.0500	0.1740			
AUTOCALL BELL/STROBE	)	0.0300	0.0000			
AOTOGALE BLELY STROBE		0.2130	0.0000			
TOTAL NOTIFICATION APPLIANCES CURRENT						

### VOLTAGE DROP (VD) CALCULATIONS

VD = {(I) (D) (21.6)}/CM
WHERE: I = CIRCUIT CURRENT
D = CONDUCTOR LENGTH (FT) ONE WAY
21.6 = CONSTANT
CM = WIRE CROSS-SECTIONAL AREA (CIRCULAR MILS)
VD = {(1.524 A) (190FT) (21.64)}/4110 = 1.522 V

 $%VD = {1.522 V / 24V} X 100 = 6.341 % REMAINING VOLTS = 22.478$ 

WIRE CIRCULAR
SIZE MILS
12AWG 6530
14AWG 4110
16AWG 2580
18AWG 1620
20AWG 1020

# NOTIFICATION APPLIANCE CIRCUIT VOLTAGE DROP & POWER REQUIREMENTS

CKT AV6 — MEZZANINE NORTH DESCRIPTION	QTY	CURRENT PER ITEM (AMPS)	TOTAL CURRENT PER ITEM
WHEELOCK STROBE 15 cd	_	0.5010	0.0000
WHEELOCK HORN/STROBE 15cd	_	0.0000	0.0000
WHEELOCK STROBE 30 cd	_	0.0300	0.0000
WHEELOCK HORN/STROBE 30 cd	_	0.0450	0.0000
WHEELOCK STROBE 75 cd	_	0.1650	0.0000
WHEELOCK HORN/STROBE 75 cd	_	0.1100	0.0000
WHEELOCK STROBE 110 cd	5	0.2200	1.1000
WHEELOCK HORN/STROBE 110 cd	_	0.3070	0.0000
WHEELOCK HORN	2	0.0870	0.1740
AUTOCALL BELL	5	0.0500	0.2500
AUTOCALL BELL/STROBE	_	0.2150	0.0000
TOTAL NOTIFICATION APPLIANCES CURRENT	•		1.5240

#### VOLTAGE DROP (VD) CALCULATIONS WIRE CIRCULAR $VD = \{(I) (D) (21.6)\}/CM$ SIZE MILS WHERE: I = CIRCUIT CURRENT 12AWG 6530 D = CONDUCTOR LENGTH (FT) ONE WAY 14AWG 4110 21.6 = CONSTANTCM = WIRE CROSS-SECTIONAL AREA (CIRCULAR MILS) 16AWG 2580 $VD = \{(1.524 \text{ A}) (310\text{FT}) (21.64)\}/4110 = 2.483 \text{ V}$ 18AWG 1620 %VD = {2.483 V / 24V} X 100 = 10.345 % 20AWG 1020 REMAINING VOLTS = 21.517

# NOTIFICATION APPLIANCE CIRCUIT VOLTAGE DROP & POWER REQUIREMENTS

CKT AV7 - MEZZANINE NORTH	QTY	CURRENT PER ITEM (AMPS)	TOTAL CURRENT PER ITEM
WHEELOCK STROBE 15 cd	_	0.5010	0.0000
WHEELOCK HORN/STROBE 15cd	_	0.0000	0.0000
WHEELOCK STROBE 30 cd	_	0.0300	0.0000
WHEELOCK HORN/STROBE 30 cd	_	0.0450	0.0000
WHEELOCK STROBE 75 cd	_	0.1650	0.0000
WHEELOCK HORN/STROBE 75 cd	_	0.1100	0.0000
WHEELOCK STROBE 110 cd	5	0.2200	1.1000
WHEELOCK HORN/STROBE 110 cd	_	0.3070	0.0000
WHEELOCK HORN	2	0.0870	0.1740
AUTOCALL BELL	5	0.0500	0.2500
AUTOCALL BELL/STROBE	-     0.5010     0.000       -     0.0000     0.000       -     0.0300     0.000       -     0.0450     0.000       -     0.1650     0.000       -     0.1100     0.000       5     0.2200     1.100       -     0.3070     0.000       2     0.0870     0.174       5     0.0500     0.250	0.0000	
TOTAL NOTIFICATION APPLIANCES CURRENT			1.5240

VOLTAGE DROP (VD) CALCULATIONS	WIRE	CIRCULAR
VD = {(I) (D) (21.6)}/CM WHERE: I = CIRCUIT CURRENT	SIZE	MILS
D = CONDUCTOR LENGTH (FT) ONE WAY	12AWG	6530
21.6 = CONSTANT	14AWG	4110
CM = WIRE CROSS—SECTIONAL AREA (CIRCULAR MILS)	16AWG	2580
$VD = \{(1.524 \text{ A}) (230\text{FT}) (21.64)\}/4110 = 1.842 \text{ V}$	18AWG	1620
$%VD = \{1.842 \ V \ / \ 24V\} \ X \ 100 = 7.676 \%$	20AWG	1020
REMAINING VOLTS = 22.158		

	FIELD VERIFY							BLDG 6, 6A FIRE ALARM	DRAWN BY LDD	DATE 09/11/2013
	FIELD VERIFI							DEDO O, OA TIKE ALAKW	CHECKED BY LDD	09/11/2013
								CALCULATIONS	APPROVED BY MCD	09/11/2013
									SCALE AS NOTED	
	09/11/13							UNIVERSITY OF CALIFORNIA	DRAWING NO.	SHEET
	03/11/13	_	LDD	LDD	MCD	09/11/13	AS BUILT	LAWRENCE BERKELEY NATIONAL LABORATORY	4B06E353_	
PROFESSIONAL SEAL (IF REVISION, APPLIES ONLY TO REVISED WORK)	ISSUE (PROGRESS, ESTIMATE, BID, CONSTRUCTION, CONFORMED, REVISION, RECORD)	REVISION NUMBER	DRAWN BY	CHECKED BY	APPR'D BY	DATE	REMARKS	FACILITIES DIVISION	PROJECT NO. 000000	2 OF 2